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HEALTH, WORK AND SOCIAL RESPONSIBILITY

*The occupational hygienist and the integration
of environment, health and safety*

BOOK OF ABSTRACTS

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T01 - AGRICULTURE HEALTH AND SAFETY**ABSTRACT ID: 413]****EFFECT OF RUBBER FARMING ON HEALTH: PERCEPTIONS OF SOUTHERN THAI RUBBER FARMERS**BOONPHADH P.⁽¹⁾, BODDY J.⁽²⁾, NILMANAT K.⁽¹⁾*Prince of Songkla University - Hatyai, Songkhla - Thailand⁽¹⁾**Massey University - Palmerston North - New Zealand⁽²⁾***BACKGROUND**

Insufficient understanding by health personnel of individuals' perceptions of work exposures could be one of the most influential factors inhibiting the success of OSH implementation (Martin, 1997; Sofie, 2000; and Stranks, 2008). Therefore, in this study, we focused on exploring how rubber farmers' perceptions of the effects of work on health influences their safety behaviour at work.

OBJECTIVES

- 1) identifying rubber farmers' perceptions of the effects of work on health, and
- 2) exploring how the perceptions influenced rubber farmers' safety behaviour at work.

METHODS

ethnography was employed to inform the methods of the data collection which were in-depth interviews and participant observation. Fourteen Buddhist and 14 Muslim rubber farmers living and working in the south of Thailand were recruited, using purposive, snowball and opportunistic sampling methods. The number of participants was determined by saturation of the data collected. The data collection was done in six months. The step-by-step ethnographic analysis introduced by Spradley (1979, 1980) was adopted to direct the analysis of this study.

FINDING

The rubber farmers' understanding of the effects of rubber farming and its environment on their health is a combination of four main aspects: 1) constructive effect, 2) destructive effect, 3) destructive effect on selective cases, and 4) destructive effect but not worth worrying about. There are two outcomes to which these perceptions could navigate the rubber farmers' safety behaviours: 1) taking one or another action to maintain their ability to keep on working, and 2) taking no action. However, there is possibility of every perception leading the rubber farmers to the latter destination, that is taking no action. Consistent with Glendon and McKenna (1995), the rubber farmers accept the work exposures and their effects on health because of foreseen benefit (i.e. earning money for living) and influences from various factors (i.e. being self-employed, working in a small-scale farm, earning just enough for a day's expenses, inaccessibility to compensation for sickness/injury leave, limited knowledge of work exposures).

CONCLUSION

Perceptions and behaviours are classified as major components of organisational culture, but into different levels, unobservable and observable (Glendon and Stanton, 2000). In this study, we have demonstrated the advantages of applying ethnographic methods to capture the two components and their complex interaction in the rubber farmers' context. The information gained is expected to enhance health agencies' understandings of the actual health needs of rubber workers, dominant occupation of Thai southerners. Hence, the OSH plan and services provided to this group of agriculture workers could accordingly be established.

[ABSTRACT ID: 40]**EPIDEMIOLOGY OF PESTICIDE EXPOSURE AMONG CUTFLOWER FARMERS - A CONTINUING STUDY**

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This was a cross-sectional study which aimed to determine associations between hematologic indices such as red blood cell cholinesterase (RBC) and mean corpuscular volume (MCV), with illnesses related to pesticide exposure among cutflower farmers in La Trinidad, Benguet. One hundred two (102)

randomly selected cutflower farmers underwent comprehensive, personal physical health and laboratory examinations and answered a questionnaire on work practices and illness. Majority were males (52%) and most belonged to the 20-35 age group (45%). Majority of exposed farmers were symptomatic, with most common complaints being headache (48%), easy fatigability (46.1%) and cough (40.2%). Analysis showed that RBC cholinesterase levels were positively associated with age ($p=0.02$), and selling pesticide containers ($p=0.008$), number of years of using pesticides ($p=0.022$), use of contaminated cloth ($p=0.033$), incorrect mixing of pesticides ($p=0.041$), sex ($p=0.002$) and illness due to pesticides ($p=0.005$) were correlated with abnormal MCV. Significant associations were also found for hemoglobin, hematocrit, RBC, white blood cell (WBC) and platelet count. Predictors of RBC cholinesterase were years of pesticide use ($p=0.037$) and abnormalities on health ($p=0.029$). The findings of the study can be used for information dissemination and pesticide reduction programs for the cutflower farmers.

[ABSTRACT ID: 420]**BIOMONITORING AND MODELLING TO EVALUATE WORKER EXPOSURE TO FUNGICIDES CAPTAN AND FOLPET**BERTHET A.⁽¹⁾, VERNEZ D.⁽¹⁾, BERODE M.⁽¹⁾, DANUSER B.⁽¹⁾, BOUCHARD M.⁽²⁾*Institute for Work and Health - Lausanne - Switzerland⁽¹⁾**University of Montreal - Montreal - Canada⁽²⁾*

Captan and folpet are thiophthalimide fungicides largely used in agriculture, particularly in vineyards, orchards or strawberry fields. These pesticides are considered as moderately toxic, probably carcinogenic in human and highly irritant. A few previous studies evaluated the skin exposure of wine makers during treatments with Folpet or Captan using environmental measurements. These studies demonstrated that the exposure could be important depending on the treatment techniques used, the workers' routine and protection means. Therefore, in order to quantify the exposure of workers in different situations, we decided to measure the exposure to Captan and Folpet by biomonitoring and to estimate the dose exposure by using toxicokinetic models developed for our study of volunteers exposed under controlled conditions to one or both fungicides by oral or dermal route.

The data were obtained from wine makers and tree farmers who used different treatment techniques, such as tractors with or without cabins, or caterpillar tracks. We collected all the urines during one week when they applied daily the studied fungicide and a second week when they tended the fields and were directly in contact with the sprayed vegetation. Days off were included in the sampling days. For each urine sample, we analysed the following biomarkers: tetrahydrophthalimide (THPI) and 2-thiothiazolidine-4-carboxylic acid (TTCA) for Captan; and phthalimide, phthalic acid and TTCA for Folpet. We expect biomarkers to increase after each application or contact with the treated vegetation. From these results, the most specific exposure biomarkers for each fungicide will be determined.

[ABSTRACT ID: 571]**LONG-TERM PESTICIDES EXPOSURE AND ABNORMAL LIVER FUNCTION**KUO T.C.⁽¹⁾, TSENG Y.C.⁽²⁾, GUO H.R.⁽¹⁾*National Cheng Kung University - Tainan - Taiwan⁽¹⁾**Chang Jung Christian University - Tainan - Taiwan⁽²⁾***OBJECTIVE**

Despite the widespread use of pesticides, epidemiology studies on the effects of pesticides on liver are limited. Uncertain exposure assessment and lack of satisfactorily comparative population may contribute to the lack of epidemiology data. We hereby conducted a study in Taiwan to evaluate the association between pesticide use and abnormal liver function tests.

METHOD

In the Guan-Tien Township of Taiwan, Taiwan, there are two major agricultural